

***NATIONAL WEATHER SERVICE WESTERN REGION SUPPLEMENT 9-2003
APPLICABLE TO INSTRUCTIONS 10-801, 10-805, 10-808 and 10-813
FEBRUARY 18, 2003***

***Operations and Services
Aviation Weather Services, NWSI 10-801, 10-805, 10-808 and 10-813***

WESTERN REGION FORECAST OFFICE AVIATION SERVICES

OPR: W/WR1x5 (K. Nelson)

Certified by: W/WR1 (R. Douglas)

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SUMMARY OF REVISIONS: This directive supersedes Regional Operations Manual Letter (ROML) W-02-97, filed with WSOM Chapters A-63, D-26, D-30, D-31, and D-82.

Signed

02/04/03

Vickie Nadolski

Date

Director, Western Region

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1. Description: The aviation program at WR WFOs is a vital part of NWS forecast operations. All WFO forecasters must be fully qualified to produce aviation products, regardless of grade. Workload often requires aviation forecasts be issued by any forecaster on shift, not just a designated “aviation forecaster”. Meteorologist Interns may write TAFs after receiving the proper local aviation training, provided the TAFs are reviewed by a forecaster before issuance. Hydrometeorological Technicians (HMTs) shall not be responsible for producing TAFs, but may produce TWEBs, as described later in this ROML.

2. Terminal Aerodrome Forecasts (TAF). TAFs are prepared by WR WFOs for airports as listed on the internal WRH MSD WEB page under AVIATION at <http://ww2.wrh.noaa.gov/msd/aviation/index.htm>.

- a. Changes to TAF Hours: Requests to change the hours of TAF coverage should come from a local or regional FAA office. A MIC may also request expanded TAF hours for sites where observations have changed from part-time to full-time, and they believe the increase will benefit aviation customers. The MIC will forward such requests to MSD, who will discuss the expansion with the WFO in terms of workload and observation reliability. If the request is approved by MSD, MSD will draft a change notice and send it to NWSH for dissemination.
- b. Addition of TAFs: Requests for new TAF service must come from a regional FAA office to MSD. Customers who contact a WFO to request a new TAF should be referred to the FAA. MSD will discuss a formal request with the responsible WFO, and upon agreement that the TAF is justified, forward the request with concurrence to NWSH for approval and action.
- c. Deletion of TAFs: Requests to terminate an existing TAF may be made by the MIC. Justification for the deletion of a TAF must be sent to OCWWS, NWSH through MSD.
- d. Verification: All WR WFOs will use the national standard program “Aviation Verify” to produce local TAF verification statistics. Other supplemental programs may be used at the discretion of the WFO, but statistics from the standard program should be used for any regional or national purposes.

Verification results must be evaluated by the WFO management team/focal point on a routine basis to determine strengths and weaknesses of the WFO's TAF program. This includes use of an individual's statistics, both to recognize superior achievement and to determine if additional training is necessary. WFOs are requested to produce summaries for the staff and WR MSD on a quarterly basis. These reports will be submitted January 30, April 30, July 30, and October 30.

- e. Content: In addition to the guidelines presented in NWS Instruction (NWSI) 10-813, WR forecasters should take the following information into account when preparing TAFs:
1. Write the forecast based on the conditions a pilot can expect when landing or departing from the airport, keeping in mind that an automated observation system may only "see" over a point, while the TAF is to cover a five-mile radius from the center of airport.
 2. Although the critical TAF period for most airports is within 2-6 hours of the TAF valid time, international airports with flights crossing the Atlantic and/or Pacific rely on the second half of the 24 hour TAF to plan their flight operations. Airlines and airports with flights originating in Australia, Europe, Asia, etc use information 12 - 24 hours from the current valid time because that is when their flights will be arriving at Western Region International Airports.
 3. Use of TEMPO group: WR verification statistics have shown that the TEMPO group often verifies less than 20 to 30 percent of the time. WR forecasters should use TEMPO sparingly in the first 12 hours of a TAF, and should eliminate them if possible after 12 hours. TEMPO is defined to indicate fluctuating conditions that have a high probability of occurring, and should not be used as a "just in case" group.
 4. PROB30 group restriction: The use of PROB30 is prohibited in the first 9 hours, including amendments. TEMPO will not be used in place of PROB30 during the restricted time period to "hedge" the forecast.
 5. BECMG vs FM: While the term BECMG is well-defined in NWSI 10-813, customers do not have a great understanding of what it means. The use of BECMG is limited to slowly changing conditions, not as a "hedge" to allow the forecaster room for error. Pilots must use both sets of conditions in a BECMG group for planning purposes. WR recommends using FM as much as possible instead of BECMG to provide a simpler, more concise forecast.

6. Due to the different natures of the TAF and public zone forecasts, there is no requirement for an exact match between the two in terms of precipitation and obstructions to vision. Scattered precipitation in the public forecast zone containing the airport may be less likely to occur at the airport itself, and the TAF should reflect that difference.

2.1 TAF Amendments: Terminal forecasts primarily fulfill the pre-flight service requirement of the aviation community, and to a lesser degree are used in-flight. Surface observations are the primary meteorological tool used for landing operations. As such, forecasters should be mindful to update TAFs as soon as they determine that new conditions are likely and will significantly affect operations, i.e., do not wait until a condition occurs before updating the TAF. Conversely, there is no need to “chase observations” with amendments. As stated in NWSI 10-813, “small fluctuations in the observation should not result in a minor adjustment to the TAF”.

2.2 Transcribed Weather Broadcast (TWEB) Services: TWEB routes prepared by WR WFOs are listed on the WRH MSD Web site under AVIATION at <http://ww2.wrh.noaa.gov/msd/aviation/index.htm>. Forecasters and interns may prepare TWEB forecasts. HMTs that have been locally certified in the TWEB program may prepare them, but they must be reviewed by a forecaster before transmitting.

- a. TWEB Use: The main customer of the TWEB is the Automated Flight Service Station (AFSS). The AFSS pilot weather briefers use the TWEB to provide information directly to pilots during a briefing, to familiarize themselves on the weather conditions in an area, and/or to compose recordings that may be accessed by pilots. They are especially valuable in areas of variable terrain. TWEBs are used primarily by aircraft flying below 15,000 feet.
- b. Philosophy: The TWEB is a forecast of expected conditions along a route between two or more points, or in the vicinity of a large airport. While the TWEB must be in general agreement with any TAFs along the route, it should go further and encompass the prevailing and significant weather along the entire route. The TWEB can provide greater detail over a smaller area (the route) than the Area Forecast prepared by the Aviation Weather Center. However, the forecaster must make sure the details do not make the TWEB so long that the customer can't use it. Generally, four lines should be the limit, with some cases requiring up to six lines. TWEBs must be amended when conditions do not agree with those previously forecast; failing to amend obviously incorrect TWEBs diminishes the credibility of the product and the NWS in general.
- c. Content: Focus on clouds, visibility, and weather below fifteen thousand feet, especially hazardous flying conditions.

1. Mountain obscuration is of particular importance and should be included early in the product (e.g. MTNS OBSCD BKN070 LCL 3SM -SHSN...). Include the height of the obscuration if caused by clouds rather than precipitation (e.g. MTNS OBSCD ABV 030).
2. Avoid crossing flight categories of ceiling and visibility if at all possible. (e.g. BKN025-035 includes both MVFR (<3000 feet) and VFR (3000+ feet) conditions. SCT-BKN015 is VFR for SCT clouds and MVFR for BKN clouds). If these are the actual weather conditions, keep the duration of those conditions as short as possible in the TWEB.
3. Include cloud tops or merging layers as appropriate.
4. Use the term "CIGS" to denote BKN-OVC layers at or below 4000 feet above the ground. The use of "CIGS" changes the official reference plane from MSL to AGL, and eliminates confusion as to how high the clouds are expected to be above the terrain. In mountainous areas, "CIGS" should refer to the approximate mean elevation of the area and may still result in obscured terrain.

Due to inherent difficulties in observing aviation weather conditions over an area, no formal verification program exists for the TWEB product. Forecasters must monitor and amend TWEBs as needed to make sure they are consistent with current and forecast conditions along the route.

2.3 Training: Pilot Weather Briefing (PWB) services as well as the associated training course were discontinued in May 2001 and any reference to Pilot Weather Briefing has been removed from the new directives. Until a new national aviation training course is implemented, all forecasters, interns, and HMTs who participate in aviation forecasting in the WR must complete the Aviation Operations Course provided by MSD. CWSU meteorologists must complete this course in order to receive a PWB certificate. WR personnel who completed the old PWB course are recommended but not required to complete the Aviation Operations Course.

The SOO or designee should administer the four closed-book exams; a grade of 70 percent is required to pass the exams. Those who do not score at least 70 percent on an exam may retake the exam after additional training. After the trainee completes all the exams, the SOO should send the results to MSD and a certificate of completion will be issued. A trainee should not take more than six months to complete the course.

2.4 Designated Pilot (DP) Program: The WR DP program is administered under the guidelines set forth in NWSI 10-808. Problems or questions that arise are handled by the Supervising Pilot (designated by MSD), assisted by a Senior Pilot (designated by the Supervising Pilot) and the RAM.

The local MIC (of the designated pilot) approves individual DP flights and signs travel orders for the flight. Funds for the flight are the responsibility of the office requesting the flight. A list of active Designated Pilots is available on the WR MSD web page.

DP flights can be an efficient and economical way to conduct some official NWS business. They can be used to carry NWS personnel to meetings or remote maintenance in less than one day, instead of land travel that may require an overnight stay. This saves both time and money, and is less disruptive to an office schedule. Another main use of DP flights is to conduct familiarization surveys of the office CWFA. NWS staff may take on a DP flight to see terrain features, hydrologic areas, and TAF locations among others. The flight may be filmed to offer the experience to the rest of the staff. The flights can also provide unique training opportunities for WFO staff to observe how weather affects flight.